

ABSTRACT OF THE DISCLOSURE

In a heterojunction FET in which source and drain areas are formed by carrying out high temperature annealing process after carrying out ion implantation in areas to be formed into source and drain areas, conventionally, the N-type carrier supply layer and the N-type active layer are doped with Si. In place of doping with Si, doping with Se or Te is adopted. Thereby, in high temperature annealing process for activating the ion implanted areas, which serves as source and drain areas, unlike the Si donor, inactivation of donor due to reaction with F-atoms occurs scarcely with respect to the diffusion of F-atoms on the surface of the epitaxial substrate, which adhered during the process. Further, since the Se and Te are impurities from VI-family, when the Se or Te occupies any grid position of atoms from III-family or V-family, the Se or Te serves as the donor. Accordingly, a high performance heterojunction FET of little deterioration of the FET characteristics can be obtained.